

# ***Joint Simulation System***

***James M. Skurka, SES  
Program Manager***

**30 May 01**



# Agenda

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- • **Mission/Organization**
- **Schedule**
- **Performance**
- **Integration**



# Typical JSIMS-Assisted Joint Exercise



## Acronyms

AAR	- After Action Review
CCWS	- Common Component Workstation
C4I	- Command, Control, Communications, Computers and Intelligence
CINC	- Commander in Chief
JECG	- Joint Exercise Control Group
JFACC	- Joint Forces Air Component Commander
JFLCC	- Joint Forces Land Component Commander
JFMCC	- Joint Forces Maritime Component Commander
OPFOR	- Opposing Forces

**CINC**  
*Establishes Training Objectives*

**Supporting CINC**

**Training Audience**

**Role Players**

**Combined Joint Task Force**

**C4I Systems**

**JECG**

*Develop, Execute Joint Synthetic Environment*

- Scripting
- AAR
- OPFOR

**Orders Guidance**

**C4I Systems**

**Status**

**Orders Guidance**

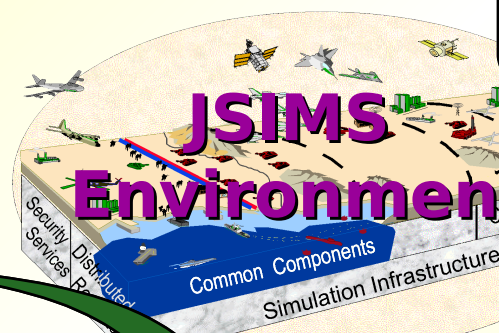
**Components**

- JFLCC
- JFACC
- JFMCC
- etc.

**Status**

**C4I Systems**

**Orders Guidance**



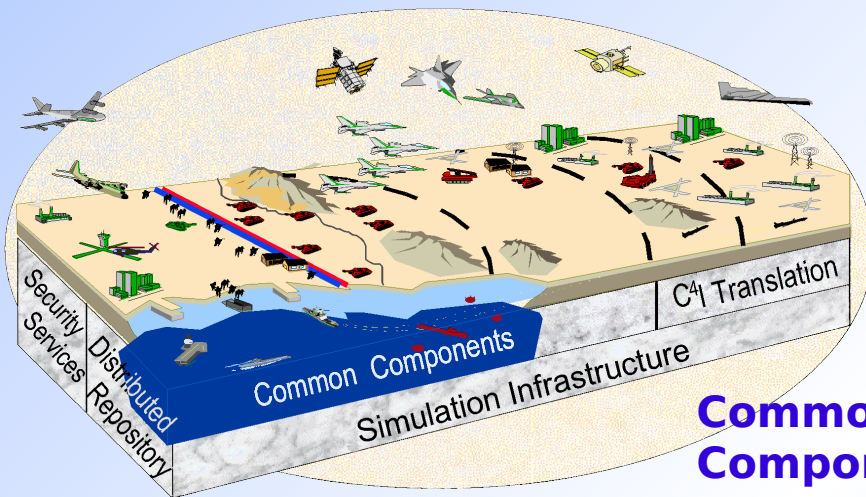
**CCWS**

**CCWS**

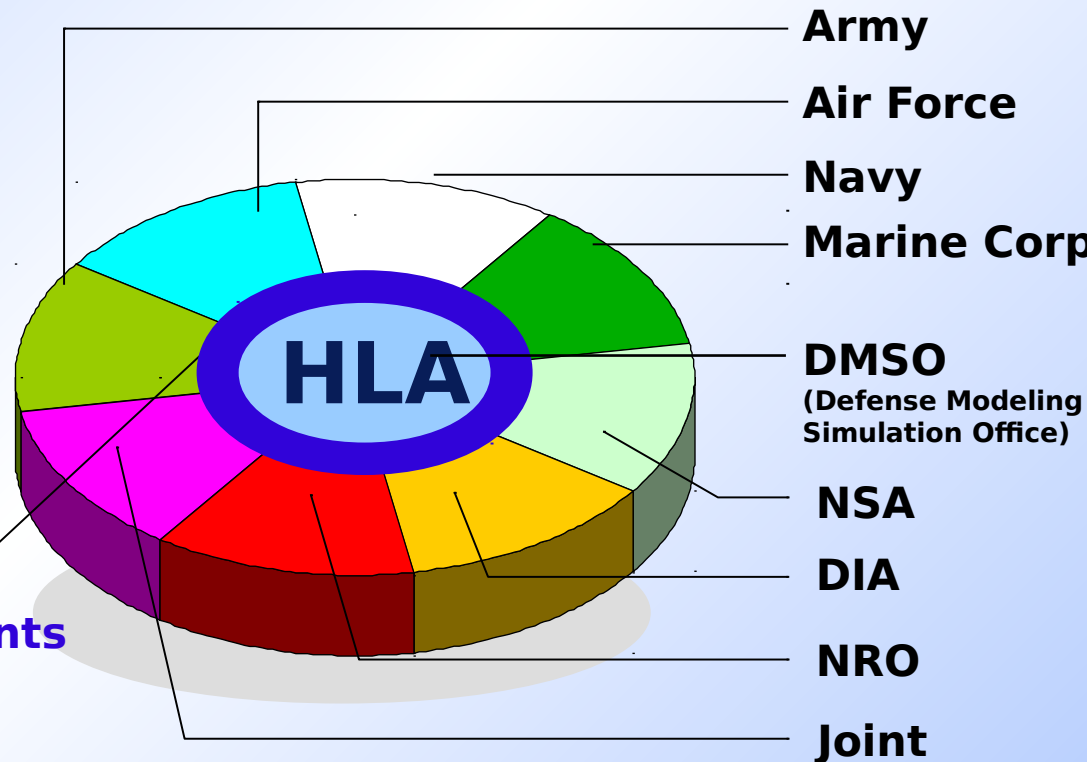
**Component Response Cells**



# JSIMS Alliance



**Common  
Components**



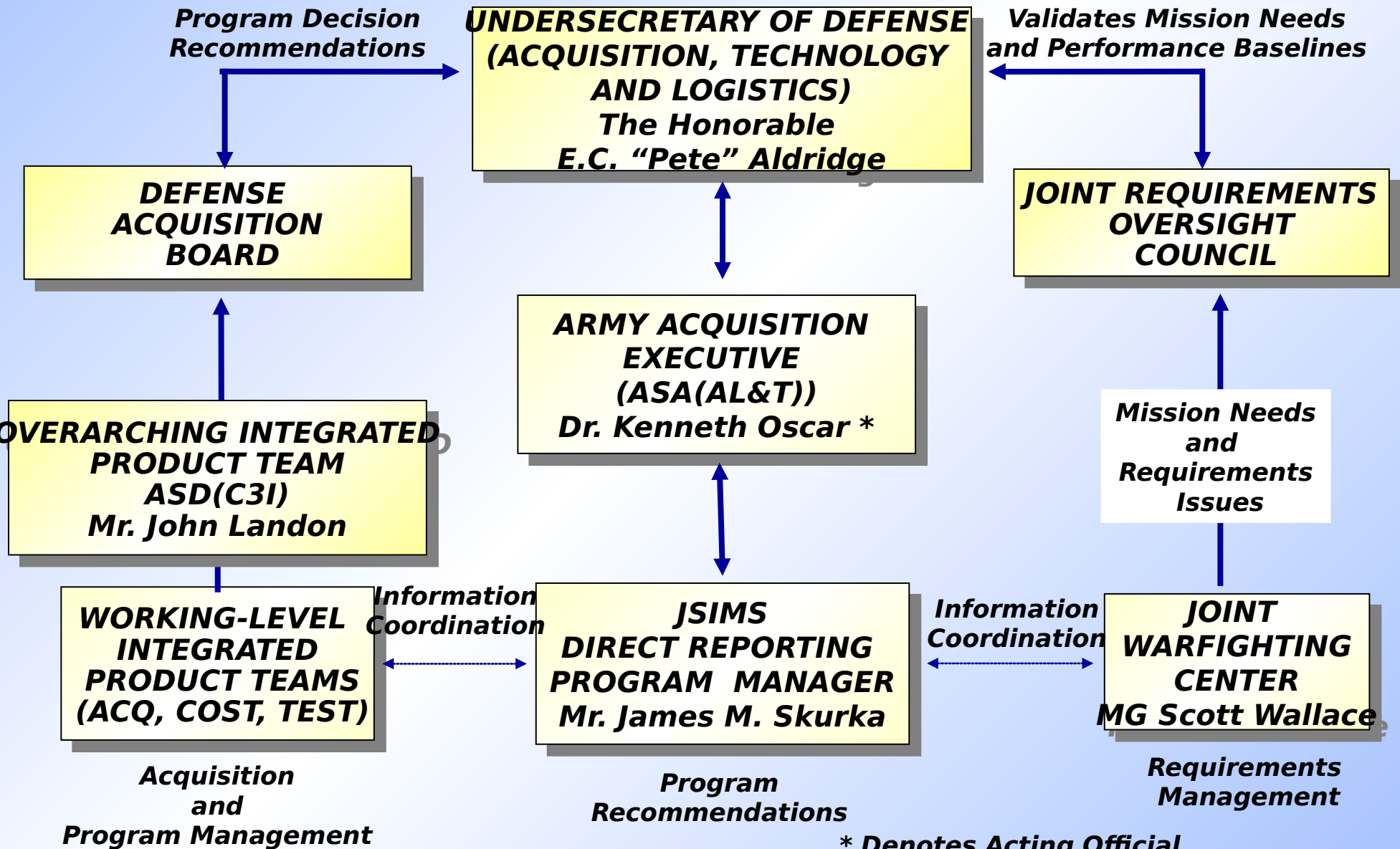
A Joint, interoperable simulation

A collaborative effort of **nine** Alliance partners

- **Replace outdated Joint and Service legacy systems**
- **Real-world C4I systems ... using common components**
- **Distributed training ... mission planning ... mission rehearsal**
- **Achieve the CJCS goal to “move more electrons and fewer troops”**



# JSIMS Streamlined Reporting Chain



\* Denotes Acting Official



# JSIMS Program Management



## PM JSIMS

*Mr. James M. Skurka, SES (USA)*

### Alliance Executive Office (AEO)

*Laura Knight, SES (USN)*

### Executive Agents (EA)

### JSIMS Requirements Control Board

*Chair: MG Scott Wallace (USA)  
USJFCOM JWFC*

## Development Agents (DA)

### USA DA WARSIM/WIM

*COL Randy Ball (USA), Ms Vanessa Hallihan, GS15*

### USN DA Maritime

### NRO DA NATSIM

*LtCol John Tillie (USAF)*

### DIA DA DOMINO

*Mr. Peter Starr, GS15*

### USMC DA

*COL Joe Buranosky (USMC)*

### NSA DA JSIGSIM

*Mr. John Riordon, GS15*

### USAF DA NASM

*COL Phil Faye (USAF)*

### Joint DA Joint Models

*CDR Jim Booth (USN)*

### DMSO DA RTI

*COL Forrest Crain (USA)*



# Executive Agents



## Executive Agents

- U.S. Army, Deputy Chief of Staff for Operations & Plans:  
- LTG Larry Ellis/BG William Webster
- U.S. Air Force, Directorate of Command and Control for Air and Space Operations: LtGen Robert Fogelsong/BGen James Morehouse
- U.S. Navy Director of Naval Training and Education (N79):  
- Dr. Allen Zeman
- Marine Corps Combat Development Command (MCCDC):  
- BGEN Thomas Jones/Dr. Mike Bailey
- Defense Intelligence Agency (DIA): VADM Thomas Wilson
- Joint Warfighting Center (JWFC): MG Scott Wallace

## Interested Agencies (Also called Executive Agents)

- Defense Information Systems Agency (DISA)
- U.S. Transportation Command (USTRANSCOM)
- U.S. Special Operations Command (USSOCOM)

DoD MSEAs

- National Imagery and Mapping Agency (NIMA)



# JSIMS Development Partners



**JSIMS Maritime --San Diego, CA**  
Maritime Domain

**Joint SIGINT Simulation (J-SIGSIM) -- Ft Meade, MD**  
Signal Intelligence, *BTG*

**National Simulation (NATSIM) -- Chantilly, VA**  
National Intelligence Systems  
*Veridian/MRJ*

**National Air and Space Model (NASM) --  
Hanscom AFB, MA**  
Air and Space Domain, *Raytheon*

**DIA Object Oriented Model for  
Intelligence Operations (DOMIN)**  
**Bolling AFB, Wash., DC**  
National Intel Process Modeling  
*Veridian/MRJ*

**High Level Architecture (HLA) --  
Alexandria, VA**  
Architecture, *SAIC*

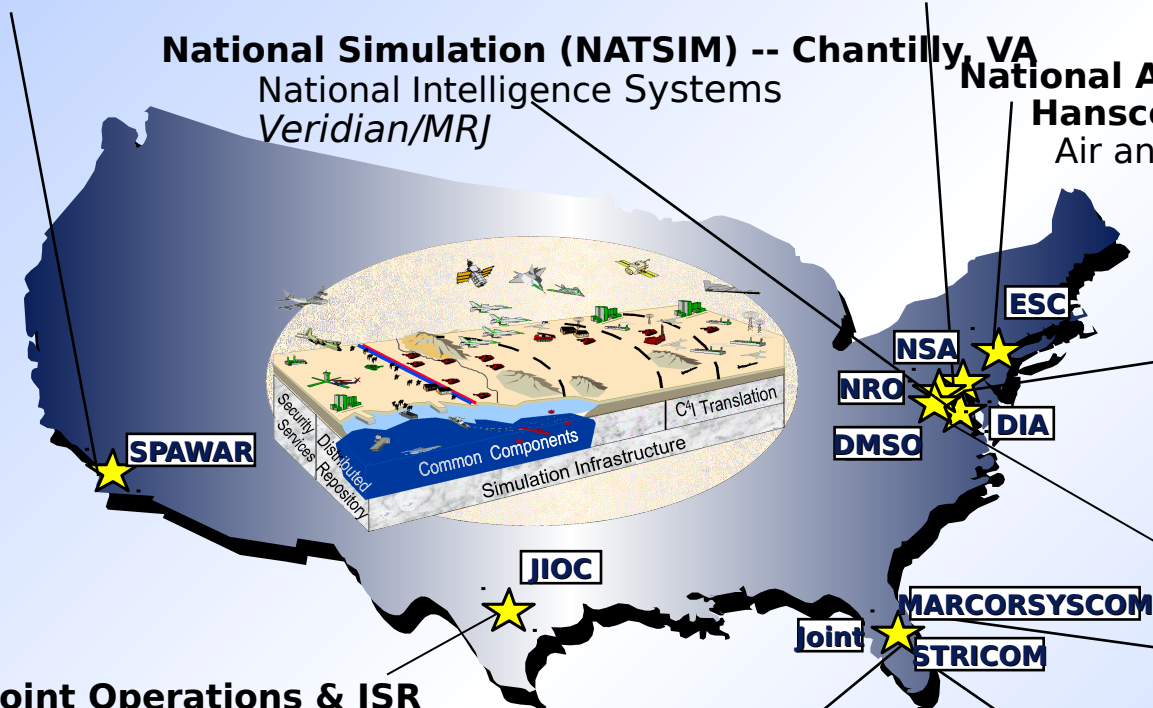
**USMC DA -- Orlando, FL**  
USMC Requirements  
*VISICOM*

**Warfighter's Simulation (WARSIM) --  
Orlando, FL** Land Domain, *Lockheed-  
Martin*

**WARSIM Intelligence Module (WIM) --  
Orlando, FL** Tactical Intelligence,  
*Veridian/MRJ*

**JSIMS Joint DA -- Orlando, FL**  
Joint Domain, *TRW*

**NASM Joint Operations & ISR  
Simulation (JOISIM) -- San  
Antonio, TX**  
Airborne Sensors, *JIOC/CACI*





# Agenda

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- **Mission/Organization**



- **Schedule**

- **Performance**

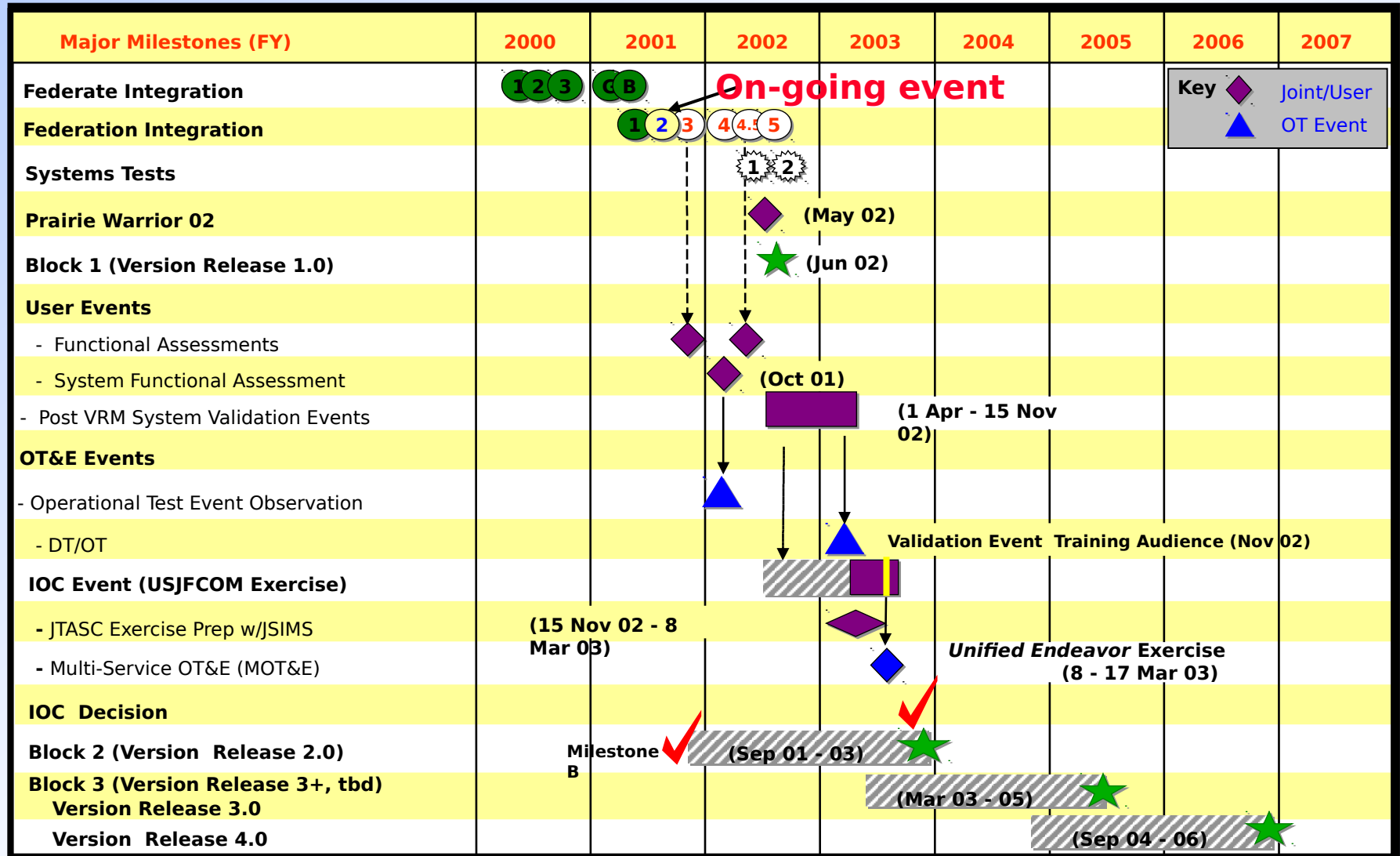
- **Integration**



# JSIMS Program Integrated Master Schedule



As of 15 May 2001





# JSIMS Blocks



FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08

Block 1

**Version 1.0**

***Joint and Components Training***

Block 2

**Version 2.0**

***Service Title X Training  
- replace "JTC"  
- first experimentation use***

Block 3 (V3.0+)

**Version 3.0**

***Increasing Joint, Service  
National capabilities  
interfaces and***



**Version 4.0**

***automation***

**Version 5.0**

Block 4, Block 5...

Blocks include:

- one or more versions
- MOT&E

Versions include validation, PI

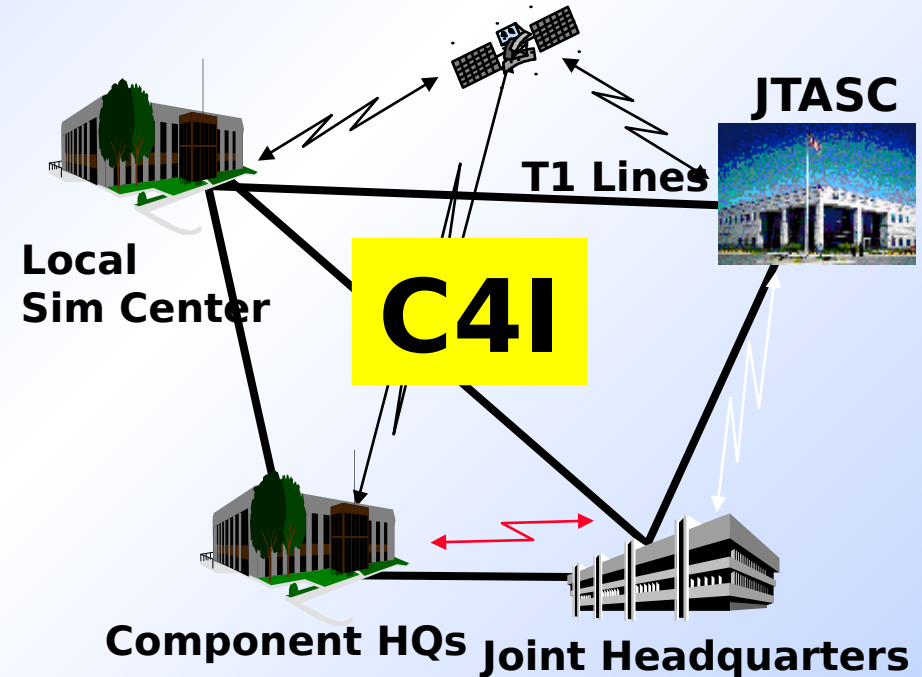


# IOC Training Event

## Unified Endeavor Exercise



- **Training Audience:**
  - Joint Task Force - training to three-star Joint and Combined Task Force Commanders and their staffs
- **Purpose:**
  - Preserve and Advance Joint Operational and Warfighting Skills
- **Complexity:**
  - Distributed exercise to multiple world-wide sites
  - 159 Joint Mission Essential Tasks (JMET) total ... 66 JMETS on JTF HQ Staff JMETL
- **Scope:**
  - Focus on CINC training plan
- **Size:**
  - 3,000 - 5,000 personnel
  - 80,000+ mandays
  - 8-15 distributed sites



### JTF Commander and Staff Training





# ***Agenda***

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# ***IOC Key Performance Parameters (KPP)***



- **KPP 1 - OPERATIONAL TASKS AND CONDITIONS**
  - Support ***CINC/JTF with Components*** Training as defined in the JSIMS Universal Capabilities List (JUCL) J3 Minimum
  - Support training of ***CINC Joint Mission Essential Task Lists (JMETL)*** and Service Task List items
- **KPP 2 - C4I INTERFACE**
  - Provide full common operational picture (COP) integration with GCCS, JMCIS, TBMCS, ATCCS, JWICS, AND GTN
- **KPP 3 - DISTRIBUTED ENVIRONMENT**
  - Distribute to geographically separate participants, given a DOD network infrastructure
- **KPP 4 - SYSTEM UPTIME RATIO**
  - Demonstrate system availability at least 90% during a 14-day computer-aided exercise, 24 hours per day

**NOTE: KPP 2 being updated based on guidance from JCS J6/J8**



# JSIMS Block 1 (IOC) Functionality



<b>Joint</b>	<ul style="list-style-type: none"> <li>• 18 Joint Models: CINC, CINC/J1-J6, CJTF, JTF/J1-J6, NCA, JFACC, JFLCC, JFMCC</li> <li>• C4I Interface to GCCS</li> <li>• Role Player Functions</li> </ul>		
<b>Army</b>	<ul style="list-style-type: none"> <li>• Maneuver</li> <li>• C2</li> <li>• Perceived Truth</li> </ul>	<ul style="list-style-type: none"> <li>• Artillery</li> <li>• Rotary Wing Aviation</li> <li>• Terrain</li> </ul>	<ul style="list-style-type: none"> <li>• Logistics</li> <li>• NBC</li> <li>• Intelligence</li> </ul>
<b>Navy</b>	<ul style="list-style-type: none"> <li>• Ship Platforms</li> <li>• Warship Motion &amp; Sensors</li> <li>• Underway</li> </ul>	<ul style="list-style-type: none"> <li>• Weapons &amp; Engagement</li> <li>• Basic Ocean</li> <li>• Flight Operations</li> </ul>	<ul style="list-style-type: none"> <li>• Naval Bases &amp; Ports</li> <li>• Ship/Ground Engagements</li> <li>• Submarine/Air/Surface Warfare Operations</li> </ul>
<b>USAF</b>	<ul style="list-style-type: none"> <li>• Air Tasking Order, ADSI</li> <li>• Civil Environment</li> <li>• AF Organizations &amp; Airbases</li> </ul>	<ul style="list-style-type: none"> <li>• Generic FWA Platforms</li> <li>• Missiles</li> <li>• Satellite Platforms</li> </ul>	<ul style="list-style-type: none"> <li>• TBMCS - Air Tasking Order, ADSI</li> <li>• Some Airborne Sensors (JOISIM)</li> <li>• Electronic Warfare (JOISIM)</li> </ul>
<b>USMC</b>	<ul style="list-style-type: none"> <li>• Landing Plan Execution</li> <li>• Waterborne &amp; Air loading, assault, landing</li> </ul>		
<b>Agencies</b>	<ul style="list-style-type: none"> <li>• MASINT, HUMINT, ELINT Model Support</li> </ul>	<ul style="list-style-type: none"> <li>• C4I Interfaces (ASAS, CSP, CGS, AEPDS)</li> </ul>	<ul style="list-style-type: none"> <li>• Full SIGINT Capability</li> <li>• Full IMINT Capability</li> <li>• Collection Management</li> </ul>
<b>Alliance Common Components</b>	<ul style="list-style-type: none"> <li>• Simulation Engine, MDDI, CASS</li> <li>• Security Common Components</li> </ul>	<ul style="list-style-type: none"> <li>• AAR, User Workstations, Scenario Preparation</li> </ul>	<ul style="list-style-type: none"> <li>• HLA Common Components (FCM, Technical Control, JCL, RTI)</li> </ul>

Note: JSIMS IOC functionality is defined in the ORD by the KPPs



# ***Agenda***

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- **Mission/Organization**
- **Schedule**
- **Performance**
- • **Integration**





- Fall 1999
  - Reorganized at the direction of Dr. Etter and Dr. Gansler
  - Big Bang approach abandoned
  - DoD High Level Architecture (HLA) adopted
  - New leadership team drawn from beyond JSIMS
- Spring 2000
  - Postulated a new overall design



# ***Architecture Definition Approach***

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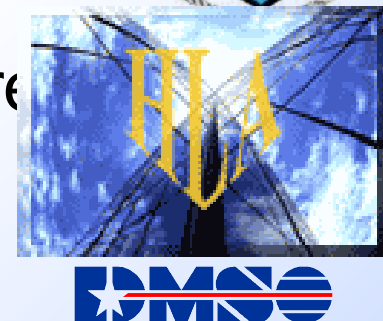


- Beware the cost of coordination
  - Minimize dependence
  - Trade duplicate effort for consensus
- Evolve through experience and not supposition
  - Lead with experimental investigations
- Six week cycle for documentation and discussion

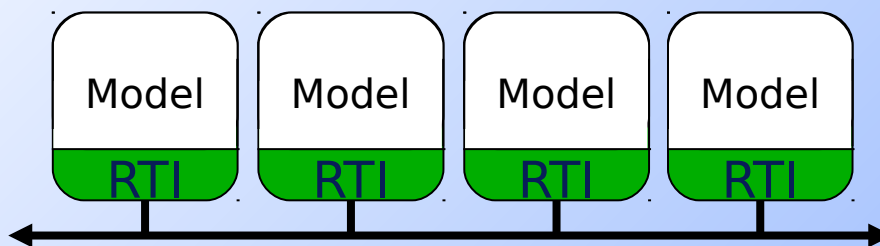
*A software architecture can be no more cohesive than the organization that employs it.*



# JSIMS Architecture



- Based on the DoD High Level Architecture
  - Joins systems, **federates**, into groups, **federations**, for some purpose based on a common federation object model.
- Software organized into large components
  - Library
  - Application
  - Domain Federates
  - Support Federates
- Components assembled incrementally





# JSIMS Architecture



- Two separate federations for security reasons

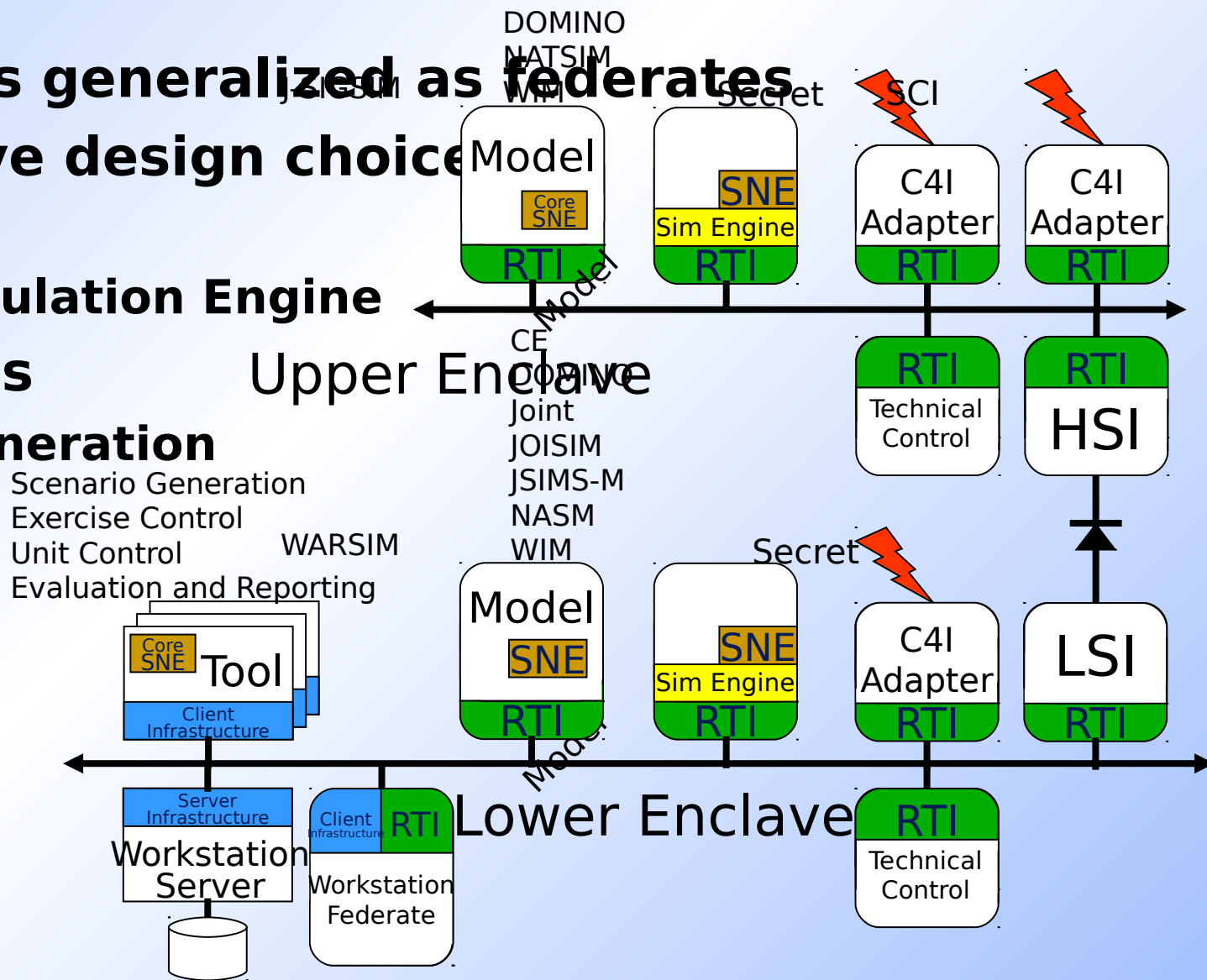
- C4I interfaces generalized as federates

- Modelers have design choice

- Direct HLA
- Alliance Simulation Engine

- Common tools

- Scenario Generation
- Workstation







# JOINT SIMULATION SYSTEM (JSIMS)

## JSIMS ALLIANCE ACROSS THE NATION



## MISSION

To provide...  
A computer-simulated environment...  
For use by CINCs, joint organizations, and the Services...  
To educate, train, and develop doctrine and tactics...  
For Joint warfighting and other operational needs.

**National Simulation (NATSIM)** -- Reston, VA  
National Intelligence Systems

**Joint SIGINT Simulation (J-SIGSIM)** -- Columbia, MD  
Signal Intelligence

**National Air and Space Model (NASM)**  
Hanscom AFB, MA  
Air and Space Domain

NRO

NSA

ESC

DIA

DMSO

**DOMINO** -- Bolling AFB, Wash, DC  
DIA National Intel Process Modeling

**DMSO** -- Alexandria, VA  
High-Level Architecture

MARCORSYSCOM

**USMC DA** -- Orlando, FL  
USMC Requirements

Joint

STRICOM

**Warfighters' Simulation (WARSIM)** -- Orlando, FL  
Land Domain

**WARSIM Intelligence Module (WIM)** -- Orlando, FL  
Tactical Intelligence

**JSIMS Maritime** -- San Diego, CA  
Maritime Domain


SPAWAR

**NASM Joint Operations & ISR  
Simulation (JOISIM)** -- San Antonio, TX  
Airborne Sensors

JIOC

**JSIMS Joint DA** -- Orlando, FL  
Joint Domain



A large, faint watermark of the JSIMS logo is centered in the background. The logo is circular with a rope-like border. Inside, there is a shield-shaped emblem containing a ship's mast and sails, a large anchor, and the letters 'JSIMS' in a bold, serif font.

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